



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Before the Board of Patent Appeals and Interferences**

In re Patent Application of

LEVERS

Atty. Ref.: SCS -540-569

Serial No. 10/539,016

TC/A.U.: 1793

Filed: June 16, 2005

Examiner: N. D'Aniello

For: AIRCRAFT COMPONENT MANUFACTURING TOOL AND
METHOD

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February 5, 2010

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Sir:

REPLY BRIEF

This Reply Brief is responsive to the Examiner's Answer mailed December 7, 2009, the date of response to which is February 7, 2010.

To a large extent the body of the Examiner's Answer is identical to the Final Rejection mailed February 4, 2009 and therefore the Appeal Brief, as previously filed, fully responds to each of these rejections. However, the Examiner, beginning on page 11, includes a "Response to Argument" which raises some new points of argument and these are responded to in the order addressed in the Examiner's Answer which is identical to the order in Appellant's Appeal Brief. Appellant will use the Appeal Brief headings to separate the various arguments.

A. The Examiner's finding that Haas anticipates the "special technical feature linking the method and apparatus claims" upon which the restriction requirement is based is an appealable issue and is without support under 35 USC §102

On page 11 of the Examiner's Answer, the Examiner argues that the discussion in the Appeal Brief is improper and that this issue "relates to petitionable subject matter under 37 CFR 1.181 and not to appealable subject matter." As noted in the Appeal Brief, the Examiner in the Final Rejection made a factual finding that the Haas et al reference "anticipates the claims as amended." Thus, the Examiner disposes of Appellant's argument that there is a "special technical feature linking the method and apparatus claims."

As this case is a national phase entry of a PCT International application, the PCT rules apply and, if there is a "special technical feature" linking the method and apparatus claims, then the restriction is not proper under the required PCT rules. Appellant had noted that the subject matter of former claim 6 was the "special technical feature linking the method and apparatus claims" and that this feature is now incorporated into each of the independent claims. Whether or not the Haas reference anticipates the alleged "special technical feature linking" independent apparatus claims 1, 21 with independent method claims 27 and 35, is a fact question for the Board of Patent Appeals and Interferences based upon the Haas reference. Decisions on such fact questions are not appropriate decisions for the Commissioner by way of petition as suggested by the Examiner.

The Examiner's suggestion that Appellant is appealing the restriction requirement is incorrect. Appellant is only appealing the Examiner's finding of fact that the common subject matter of the independent claims, i.e., the "special technical feature" which links the method and apparatus claims, is anticipated by the Haas reference. If the Examiner's fact finding is overturned by the Board, then Appellant will be in a position to petition the Examiner's restriction requirement. However, for Appellant to petition the restriction requirement prior to obtaining the Board's factual determination as to whether the "special technical feature" is disclosed in the cited prior art, would be premature.

The Examiner cites no MPEP position nor rule nor statute which requires Appellant to proceed with a Petition to the Commissioner where the status of the Petition will be determined by a factual determination, especially where such factual determinations are the purview of the Board of Patent Appeals and Interferences. Accordingly, the Examiner's position that the argument with respect to the "special technical feature" not being anticipated by the Haas reference is a petitionable matter rather than an appealable matter is respectfully traversed.

B. The Examiner improperly ignores positively recited limitations in each of independent claims 1, 21, 27 and 35

Appellant's Brief notes that the Examiner has failed to properly construe the subject matter of the independent claims. It goes without saying that the Examiner must construe claim terms giving the words their ordinary dictionary meaning absent a special definition contained in Appellant's specification or claims (presuming that special definition is not contrary to the ordinary definition of the terms). Here, Appellant's

claims specify a “shaped surface” and that shaped surface is “defined by an open structure” and the open structure is limited to include “spaced apart elements separated by gaps.”

(1) The ordinary meaning of the claim terms

Appellant’s claim terms of “open structure,” “spaced apart elements” and “separated by gaps” are all terms used by those having ordinary skill in the art and require a specific interrelationship. The fact that these words are used in Appellant’s independent claims is not disputed by the Examiner. The Examiner does not dispute the Appeal Brief discussions regarding the definitions of “spaced” and “gap.”

Appellant notes that the term “spaced” also is modified by the adverb “apart” which, according to *Webster’s Ninth New Collegiate Dictionary*, means “away from one another in space or time.” Thus, the common English language definition of the words which define the term “shaped surface” in Appellant’s claims require “an open structure, the open structure including spaced apart elements separated by gaps.”

As will be seen, the “spaced apart” interrelationship is not disclosed by the Haas patent, especially as shown in Figure 4B.

(2) To the extent the Examiner believes the above claim language is somehow indefinite, he must then look to Appellant’s specification in order to determine how to construe that claim language

While the Examiner has not found the claim terms to be indefinite, if he does, then he must resort to the manner in which the claim terms are used in the specification. Here, Appellant’s specification at page 4 at lines 2-4 details the benefit of the present invention, i.e., removing “the need to machine the complex shape of a solid supporting and forming

surface as required in the prior art.” In other words, the prior art is a solid machined structure, which could be thought of as a plurality of plates in which the boundaries are merged with each other. It is desirable to avoid the machining necessary to create such a structure.

In the Specification, in the paragraph bridging pages 4 and 5, the “shaped surface” is described as being “an open structure” which includes “elements separated by gaps.” In the sentence bridging pages 6 and 7, the specification states “[t]he elements are preferably spaced apart from each other.” On pages 18-20, Appellant’s specification describes the elements illustrated in the drawings, i.e., the claimed “elements” are the rib boards 6, and the gaps are the space between the rib boards. In fact, on page 19, line 15, the specification specifically indicates that the rib boards are “spaced apart by means of spacing rods 7 that run between the rib boards and are fixed in place by bolts 8.”

Accordingly, if there is any doubt as to what Appellant’s claimed “shaped surface” is and how it is defined in the claim, resort to how the claim terms are used in the specification should put that doubt to rest. The claim terms cannot be met by elements which are not spaced apart. The claim terminology cannot be met by elements which are not “separated by gaps” either a solid machined piece (as in the described prior art) or a series of plates which are adjacent each other with no gaps therebetween.

The improvement noted in Appellant’s specification over the prior art is the distinction of the claimed invention from the prior art device which is a solid machined complex shape, as described on page 4, lines 2-4. As will be seen, the Haas reference

does not disclose anything meeting Appellant's claim requirements and indeed is merely a disclosure of that which is clearly prior art.

In view of the above, the Examiner has clearly failed to properly construe the ordinary meaning of conventional terminology used in each of Appellant's independent claims 1, 21, 27 and 35. Additionally, it appears the Examiner has ignored the confirming language in the specification which demonstrates how the claim terms are to be interpreted. In each instance, the Examiner's refusal to properly construe the claims constitutes reversible error and confirmation thereof by the Board is respectfully requested.

C. The Examiner fails to support his rejection under 35 USC §102 as the reference discloses neither “spaced apart elements” nor “gaps”

“(1) Haas fails to teach spaced apart elements” and “(2). Haas fails to teach any “gaps””

The Examiner again repeats his argument that Figure 4B in Haas teaches Appellant's claimed “spaced apart elements separated by gaps.” The Examiner now apparently suggests that the “external chamfers or radii 150 (FIG. 4B)” of Haas (col. 8, lines 13-14) are Appellant's claimed gaps spacing “apart elements.” On page 12, the Examiner fails to dispute the Haas teaching that the Figures 5 and 6 are “exploded” views (by definition an exploded view shows spaces between elements where they do not normally exist).

However, the elements shown in Figure 4B (and as confirmed in Figure 1) are not “exploded” views and demonstrate that the pins are in contact with each other. As

described in the Haas patent, this contact between pins is required so that “the translating pins 5 or 505 are prevented from rotating by the restraining action of the pins’ planar sides against the sides of the Tooling frame 285 (FIG. 1)” (Haas, column 8, lines 7-14). The square pins are mounted on threaded shafts and, as the shafts rotate, the pin moves upward or downward (hence the name “translating pins 5 or 505”) only if the square pin is prevented from rotation. It is only prevented from rotation by the contact with the neighboring square pin. If the square pins were “spaced apart” they would rotate along with the threaded shaft and would not be adjustable.

The Examiner does not dispute that Figure 4B (and Figure 1) shows no space between the translating pins, but it does show channels formed by the optional external “chamfers or radii 150.” Importantly, Figures 1 and 4B show the individual pins of the Haas reference being in direct contact with adjacent pins and therefore they cannot possibly be separated by gaps. The Examiner suggests that being in contact “would result in undesirable wear and friction” on page 12 under “C-1” but provides no support in Haas for this speculation. Certainly this Examiner speculation does not overcome the specific teaching in Haas that the pins must be in contact with each other in order to prevent their rotation and thereby provide the required “translation” when the lead screw is rotated.

Apart from the chamfers or radii 150 in Figure 4B, the only drawings in Haas upon which the Examiner bases his conclusion that the translation pins are spaced apart are Figures 2, 5 and 6. The Examiner does not dispute that each of those figures is specifically described in column 6 under the Brief Description of the Drawings as being an “exploded perspective view.” As is well known to draftsman (and most patent

examiners), an “exploded” view means the elements are separated somewhat for ease of drawing and understanding. It is this separation between the pins which the Examiner may be referring to in Figures 2, 5 and 6 as the purported “gaps” between the pins.

Accordingly, the Examiner is simply (and possibly intentionally) misreading the Haas reference. Appellant suggests that the Examiner may be intentionally misreading Haas because the note that Figures 5 and 6 are an “exploded perspective view” is set forth in the paragraph bridging pages 15 and 16 of Appellant’s Appeal Brief. Why or how the Examiner continues suggesting that the pins “are not touching each other” (page 11, line 14 of the Examiner’s Answer) is simply a misunderstanding of what is meant by an “exploded perspective view.”

The Examiner’s contention that there is no specific definition of “spaced apart” or “open structure” in Appellant’s specification is again respectfully traversed and has been addressed above.

In view of the above, the Examiner’s position regarding Haas teaching the claimed “spaced apart elements” is respectfully traversed and the Board’s attention is directed to the fact that the only disclosure which shows gaps between elements are the exploded views in Figures 2, 5 and 6. Figure 4B shows no gaps between pins and indeed no gaps could be included because of the contrary teaching in Haas at column 8, lines 9-11. The chamfer or radii 150 merely realizes the fact that it is impossible to machine a perfectly square corner (which would be dangerously sharp).

Even if there are chamfer or radii gaps in real world machined translating pins, this does not avoid the fact that there is no separation between the Haas elements and the

claims all require “spaced apart elements.” Accordingly, the Examiner has not rebutted Appellant’s contention that he has ignored the simple language of Appellant’s independent claims.

D. The Examiner fails to support his rejection of claims 4, 5, 7-9, 18 and 19 under 35 USC §103 over Haas

The Examiner, in the paragraph bridging pages 12 and 13 of the Examiner’s Answer, suggests that the Haas pins are “separated by gaps” and that these are the “small gaps 150” as disclosed. However, Appellant’s claim clearly states “spaced apart elements separated by gaps.” The ordinary meaning of this language is that each of the elements is spaced apart from other elements and that each of the elements is separated from the other elements by gaps. Both claimed conditions must be present. In Haas, none of the elements are “spaced apart” (and the Examiner identifies no evidence disputing this fact, only his own speculation regarding “undesirable friction and wear”) and, arguably, none of the elements are separated from other elements by gaps. Even if the “chamfer or radii 150” is considered a “gap” as claimed, the other claim condition, i.e., that the elements be “spaced apart,” is not met by Haas.

Moreover, if there were any separation between the elements in Haas, then during the operation of the lead screw, instead of the pins translating longitudinally to change their vertical position, the pins would instead rotate due to the friction between the pin and the rotating lead screw and not move in translation as required by Haas. It is only when the “translating pins” of Haas are in sliding contact with each other (so the

translating pin prevented from rotating) that the “translating pin” actually translates during rotation of the lead screw.

The Examiner does not suggest that the Bornschlegl reference supplies any disclosure of the structure or structural interrelationships of the elements set out in Appellant’s independent claims (i.e., “spaced apart” and/or “separated by gaps”) and alleged by Appellant to be missing from the Haas reference. Thus, for the “open structure” recited in Appellant’s claim, the Board must decide whether this structure is shown or disclosed by the Haas reference itself. If it is not disclosed in Haas, then there is no support for the rejection of claims 4, 5, 7-9, 18 and 19.

E. The Examiner fails to support his rejection of claims 1 and 18-26 under 35 USC §103 over Bornschlegl in view of Haas

In the Examiner’s Answer, the Examiner fails to dispute Appellant’s previous observation that the Bornschlegl reference fails to teach any intermediate member as required in the independent claims. Moreover, the Examiner does not dispute that the Bornschlegl reference requires that the shaped surface bear directly on the aircraft component and would lead one of ordinary skill in the art away from using an intermediate member. The Examiner does not dispute Appellant’s observation that with respect to the Haas reference, it requires that each of the pins be adjacent to each other so that “when the screw threads under each pin is turned, the pin doesn’t rotate and the turning threads adjust the vertical position of the pin.” Appellant again notes that with a gap between pins, the pins would be free to turn and therefore rotation of the lead screw thereunder would not adjust the pin position vertically. The Examiner does not dispute

any of these statements in Section E of the Appeal Brief. The Examiner merely states that the reconfigurable surface of Haas is used and therefore the intermediate interpolating pads 210 of Haas et al. are required.” The Examiner ignores the fact that Bornschlegl would clearly lead one of ordinary skill in the art away from Haas and in fact precludes the Haas combination of elements.

F. The Examiner fails to provide the required “analysis” of his rationale for combining elements from the Haas and Bornschlegl references

The Examiner references “points F and G” in the Answer but apparently limits his arguments only to point G. Accordingly, the Examiner does not rebut the Appeal Brief Section F which notes that the Supreme Court requires an explicit “analysis” of the Examiner’s rationale for picking and choosing elements and then combining them in the manner of Appellant’s claims.

Appellant has previously pointed out that not only does the Examiner fail to meet the *KSR* requirements for establishing a *prima facie* case of obviousness, he is ignoring the incompatibility of the Haas and Bornschlegl references which would lead one of ordinary skill in the art away from combining those elements. Accordingly, the Examiner has failed to meet his burden of providing the required explicit “analysis” and any further rejection thereunder is respectfully traversed.

G. The Examiner ignores the facts that both references would “teach away” from the claimed invention thereby rebutting any *prima facie* case of obviousness

The Examiner does generally allege that “the references are not teaching away from each other” and notes that both relate to shaping aircraft components. However, the fact that both references relate to shaping of aircraft components, even if true, does not dispute the fact that the references are not combinable and teach away from the claimed invention.

The Examiner admits that Bornschlegl “has a rigid structure which is not reconfigurable.” Haas teaches a reconfigurable surface and the present invention relates to a reconfigurable surface. The Examiner does not explain how or why one would resort to Bornschlegl with its “rigid structure” when Haas and the present invention utilize reconfigurable surfaces. The present specification notes that it is desirable to avoid a custom machined structure such as Bornschlegl and the whole point of Appellant’s invention is a reconfigurable surface which avoids the need for a solid creep forming base structure.

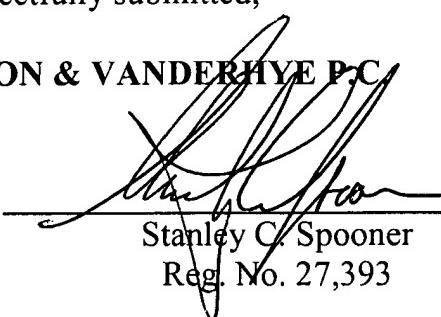
Haas in teaching no separation between elements and requiring such interrelationship in order for the translating pins to be moved vertically by the lead screw, and Bornschlegl teaching away from any intermediate member (it would not be needed in the Bornschlegl solid form), both would lead away one of ordinary skill away from the claimed combination. The Examiner simply denies the facts of both the Haas and Bornschlegl references.

As a result of the above detailed discussion, there is simply no support for the rejections of Appellants' independent claims or claims dependent thereon under 35 USC §102 and §103. Thus, and in view of the above, the rejection of claims 1-5, 7-26, 38 and 39 under 35 USC §102 and §103 is clearly in error and reversal thereof by this Honorable Board is respectfully requested.

Respectfully submitted,

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